

LISTINGS NEWSLETTER

Newsletter of the
Long Island Sinclair/Timex
Users Group
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COMING EVENTS: The next L.I.S.T.
meeting will be Sunday 3/10/'96
at 2 P.M. at the home of Harvey
Rait (see address above).

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When you put aside an older computer and set up the latest one in your acquisition, many things happen as it did to me. I started years ago (could have been 1981) with a TS-1000, 16K add on, 2060 printer, 2020 tape recorder, and an old B/W TV. The whole shebang probably cost \$70.00. A single game of Backgamon took an hour to play at snail speed, Tank Attack was a crazed line drawing with 360 degree panoramic vista. This was exciting then. Now it seems to have been as exciting as watching grass grow. How about Tower, that mind challenging dungeon and dangerous bats adventure that kept you going for hours. I awed at the screen and marveled at the competence of the programmers that devised it.

But I soon graduated from that kindergarten to the middle school. The TS-2068 appeared with its color output, chicklet keys, and plug-in ports. Soon I invested in an Oliger interface, dual 5 1/4 " disc drives, a color monitor, and a full sized printer (albeit an Olivetti PR-2300). Now I was a full time hacker. The TS-1000 was relegated to the bottom draw of my desk, along with all the taped programs that had a 75 % loading ability.

The TS-2068 was a quantum leap into the future for me. There was a virtual plethora of games and utilities and an active software world. The British Spectrum and magazines was prolific in their output. This was approximately 1984. LIST had a membership approaching 100 paid members and a shareware library of hundreds of programs. Our monthly newsletter was filled with "how tos", "don't dos" and "try this" tips and projects. Ah, the glory days. Total cost at least \$400.

But, alas, once again graduation time. I entered QL High. The TS-2068 and all its associated stuff joined the TS-1000. Too much bulk to stuff into that desk drawer. Several cartons now stored in an attic space.

QL was now the official name of the game for me. Miracle Systems Trump Card put me into the big leagues with the IBM's and MACs. I work exclusively with the QL now, and have been for at least the past 6 years. When I read the monthly publications from QUANTA and IQLR (I am a member of both), I still feel like a novice.

The strange thing that has happened is that I forgot the ins and outs of the older Sinclair/Timex machines. I cannot answer a lot of questions posed to me in LIST correspondence. I defer the TS-1000/ZX to Fred Stern down in Florida, and bring up other questions at our monthly meetings.

A lot of club members that I get a chance to write to advise me that they are well advanced into senior citizenry.

Don L. turned 70 in January, and Fred C. admits to 82+. I feel like the kid of the bunch at 65+. Sure I should have more spare time now, but I avoid those sessions at the keyboard when 1 hour becomes 6 and it is 2 A.M. in the morning.

I still do my checkbook balance the old fashioned way directly in the checkbook register. Adding and subtracting by hand. I do not use a household budget program to tell me where and from my expenses are.

(continued on page 5)

QL CORNER

The fourth annual QL computer show will be hosted by the New England Sinclair QL User Group (NESQLUG). The event will be held at the Bedford, Mass, Ramada Inn, 340 Great Road. The banquet will also be held at the Ramada Inn. I have been advised that there are 30 rooms available at the Ramada, at \$49.00 for a single, \$59.00 double occupancy. Harvey Rait and I will be attending this event. When additional information becomes available, I will advise our readers. The reservation telephone number for the Ramada Inn is 1-800-228-2828.

John Taylor, Treasurer of QUANTA, handles the Quanta hardware sales. At present, John has been selling the QIMI mouse interface and a compatible mouse (I purchased one last year and it operates beautifully). The price is £25.00 for the interface and the mouse sells for £10.00. Since Miracle Systems has had to cease production of the Super Gold card due to strict EMC regulations, John Taylor is producing 50 Super Gold cards at the same price as Miracle Systems had been selling them. The price is £275.00. If any member of Quanta is interested, please contact John Taylor at 145, Barrowby Road, Grantham, Lincs NG31 8AJ UK.

After the business portion of the January LIST meeting, we retired into Harvey's computer room. Harvey loaded in The Editor SE and requested how to use some of The Editor's commands. The easiest way to come to grips with the commands is to open the manual where the commands are explained in detail. Since Harvey had done some reading on the commands, he explained that there must be another way to look up the commands without using the manual. There is another way - the EDT_HELP file which is activated by depressing F1 (just like the Psion 4 programs).

I had some Editor files in my case and we loaded a two page file into Editor. I asked Harvey if he would like to convert the text file into a two column file? He requested that I do so.

Placing the cursor at the first character of the first line, I entered 'RC.2COL_cmd'. The text immediately started to format 80 column text into 38 column text. Then the cursor jumped up to line 1, column 1 and blocked off 63 lines of text starting at the 64th line of the formatted text. Then the left hand side of the blocked text moved onto column 42 which provided the second column of text. Below are two Editor_cmd files which I had developed approximately 6 years ago. If you intend to use these_cmd files, type them into Editor without the titles and save them to your media with this command: W.flp1_2COL_cmd (and/or 3COL_cmd). To activate the command files, enter RC.2COL_cmd and immediately your text will be formatted into two columns.

```
2Column_cmd
T SI1 SL1 SR38
BTK BH RP PR
T GL63 BS GL124 37CR
BE T 42CR BM BH
```

```
3Column_cmd
T SI1 SL1 SR38
BTK BH RP PR
T GL63 BS GL124 37CR
BE T 42CR BM BH
GL125 BS
GL186 37CR BE BH
T 84CR BM BH
```

If you want to use the 3Column_cmd, cmd file, you must tell the printer that you are changing pitch from PICA, 10 characters per inch to ELITE, 12 characters per inch. ESC M - At the top of the file press ESC. An up arrow character will appear with a line on top of the arrow. Then enter SHIFT M. The printer will understand this command and print all three columns of text in ELITE pitch.

It has been approximately, two years since I had begun to try to extract those 'special characters' from within the printer's Graphic Character Set II. With the aid of a simple driver program which appears on page 125 of The Editor manual, I have been able to extract any character that I can find useful. This printer driver has a Translate section which is easy to use when you have an understanding of just how to write the codes into this program. The printer driver is written in SuperBASIC. I finally decided to prepare 26 translates for printer characters which I feel could be useful for me. Below is a demo program which will give you some idea of how useful they are:






Test using GREEK & CTRL characters for direct translates

I have 50¢ and am I glad that we do not use the UK £.
I purchased a R of cream, however, I only needed $\frac{1}{2}$ R.
Maybe I could use less, like, a $\frac{1}{4}$ of a R. On occasion,
I would like to go to a 'BAR' and have a R of
ale and a slice of apple π .

if I were a cowboy, I would like to sing 'hΩ' on the range
and I am + about this feeling, or at least, feeling either
± about this! I hope this makes some ¢s' to you!!!

⌈ ⌋ ⌌ ⌍ = 2-line graphic chars

┌ ┐ │ └ ┘ ┐ ┌ 1-line graphic chars

CTRL/SHIFT/P	Light gray bar		CHR\$(176)
CTRL/SHIFT/Q	Medium gray bar		CHR\$(177)
CTRL/SHIFT/R	Dark gray bar		CHR\$(178)
CTRL/X	Full Space bar		CHR\$(223)
CTRL/T	$\frac{1}{2}$ lower black bar		CHR\$(220)
CTRL/R	Left $\frac{1}{2}$ thick bar		CHR\$(221)
CTRL/Q	Right $\frac{1}{2}$ " " bar		CHR\$(222)
CTRL/S	$\frac{1}{2}$ top black bar		CHR\$(219)
CTRL/9	Centered dash		CHR\$(254)

B
O
X

A nice BOX

If any of our LIST members would like to have a copy of the simple printer driver which is used with any text file, just send me a formatted disk with 78¢ for postage, and I will provide you with several charts of demo graphics which you can print out. Note that all of the Translates are Epson and IBM compatible, and another note that in order to use these translate characters, you must have either The Editor or some other text editor which will allow for embedding the control characters.

See you next month... *Bob Gilder*

I do not have much of a desire to view a graphic display of concentric circles, splotches, or growing colonies of flora or fauna.

When my grandchildren visit, they always want to work the computer. The "little guy" who is just 2 years old calls it a 'puter. He knows how to insert a disc into the floppy drive and to remove it. He calls the disc a tape from his VCR experience. He cannot understand how you could take the disc out and the computer still works. (This after the program has loaded). He likes the program Duckshoot because the little duck quacks across the screen. He "shoots" by pressing the space key just for the sound effect, since he has no idea about shooting a duck. Then he wants to turn off the screen, leave his seat and come back in a minute or two. In the meantime because I did not turn off the program, even though the monitor is dark, the duck quacks can be heard from the QL speaker near the microdrives. He thinks the duck went back to his house and is resting until the monitor is turned on again.

The "big guy" who is almost 6 years old has several favorites that require him to interact. He likes "Attack of the Things", Quasimodo, Stuntman etc. After a short time even these start to bore him and he wants me to load "Quill" so he can type letters. At this point he knows how to "capslock" and when he has typed enough sentences he knows to press F3, P for print command and enter 3 times for the printer to give him hard copy. I don't think that I knew that much when I was his age.

I can't wait until he gets his own 100 MHZ Pentium with Quad speed CD ROM, 16 MB RAM, a 1.2 GIG hard drive, 14.4 Baud modem, .28 dot pitch non-interlaced SVGA monitor, and of course MPEG full motion video (whatever that is). A color printer/fax will be de rigour. Then if I can pry him and his little brother away, maybe he'll let me play for a while.

Where is the dinosaur burial ground now
that I need it.

The whole gist of this musing is one of
nostalgia and great expectations at the
same time.

I would like to hear from old timers out
there who would like to share their own
experiences with our newsletter readers.
Give us your bio, computer history, and
if you can some anecdotal stories of any
of your grandchildren's workings with the
computer.

Harvey Rait

A FEW BITS OF ADVICE

IBM estimates that almost half of all personal computer purchases lead to at least one help - line call. Before you call your computer's help - line, here are a few episodes that you might be able to learn from.

- # When an IBM specialist suggests that a customer "open a window", the customer obliged. Since it was in the dead of winter, after a while the customer politely asked if he could close the window because he was getting cold.
- # A couple called IBM and said that they were experiencing some problems with a screen command. The computer was telling them "eject diskette and hit any key". They could not find the button that said "any key".
- # After telling the technician the serial number of her new PC, the technician told the woman: "I see you have an APTIVA." The next sound he heard was a loud shriek and the woman said she would be right back. Worried, the technician waited until she returned to the phone and asked if she was all right.
Her response: Had I realized you could see me, I never would have telephoned in my bathrobe".

WHO'S ONLINE

Some of us here at LIST have been wondering how many of our members are using modems with their Sinclair computers. It would be helpful if those of you who are into communications would take a few minutes to let us have the following info.

COMPUTER USED
COMMS PRGRM
BAUD RATE
EMAIL ADDRESS.....
ONLINE SERVICES USED.....
SUGGESTIONS FOR LIST.....

You can reply to me at either of the following addresses:
74776.2342@compuserve.com
bmalloy@chelsea.ios.com (Internet)

Or, you can use our snailmail address.

Bob Malloy

PLEASE RENEW NOW!
Time to renew! Don't
miss out on news and
information about
our S/T computers.

T/S 1000/ZX81 External Keyboard Buffer

by Tim Stoddard

If you're like me, you like to attach not only your memory pack, but also a modem, a printer, a joy-stick interface, an AC controller, and anything else that there is room for behind the computer. One of the big problems with this, especially if you have a matrix keyboard like the TI 99/4a that Radio Shack sells, attached off the main circuit board, are those "unexplained" crashes (the ones where you didn't touch any peripherals on the back) or the external keyboard seems to "lock-up" on certain keys.

It's caused by the "antenna effect". The internal or external keyboard is directly connected to the CPU address bus through diodes, and acts like an antenna; picking up all kinds of noise such as that emitted from fluorescent lighting.

The diodes that are used to isolate the keyboard matrix from the address bus help, but just don't do the job, especially when you add that all-important external keyboard to make your entry world a little easier. What is needed is some sort of buffer to completely isolate the address bus and provide plenty of "drive" to that nice external keyboard.

A 74HCT245 buss driver to the rescue! This driver not only provides the needed drive and isolation, but it also almost solders right in! Note that you can also use the slightly more inexpensive 74LS245, but it will use more power and dissipate more heat inside your computer.

First open your computer by removing the five screws on the bottom. When you do this, OBSERVE PROPER STATIC PRECAUTIONS! Work on an anti-static mat or sheet of aluminum foil. Keep your body in contact with the mat/foil, while handling your computer and the 74HCT245. Three of these screws are under the rubber feet. Take the back off and locate the two screws that hold the circuit board on to the top part of the case. Remove these two screws and CAREFULLY watch those two internal keyboard ribbon cables... and turn the Printed Circuit Board over.

UNSOLDER EACH OF THE
8 DIODES HERE

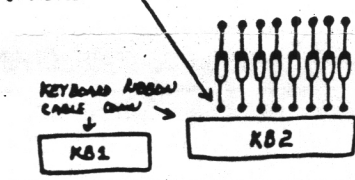


FIG 1
(COMPONENT SIDE)

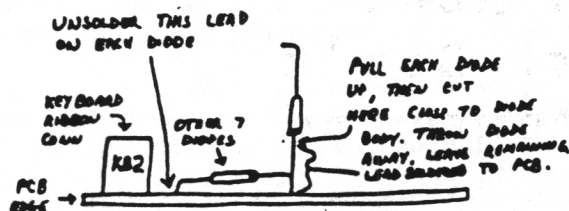


FIG 2
(PCB EDGE)

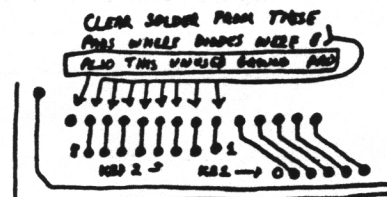


FIG 3
(NON-COMPONENT SIDE)

Using figure 1 locate the eight diodes just above the keyboard ribbon cables. Now using a pair of needle-nose pliers and a LOW WATTAGE (10 to 22 watts) soldering iron remove one side of each diode that is closest to the keyboard connector.

Using Figure 2, bend and then cut each of the eight diodes as shown.

Next turn the PCB back over and working very carefully use a solder sucker or solder wick to remove the solder out of the pads closest to the keyboard connector and also from the pad just to the left of the left-most diode location. See figure 3.

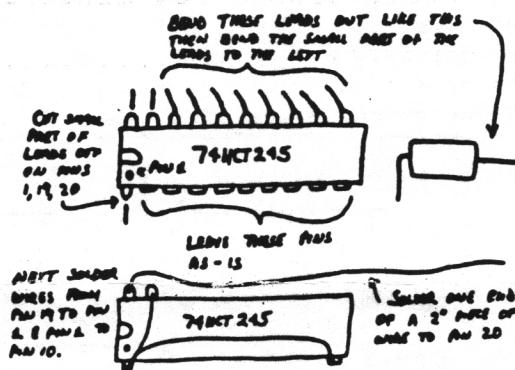


FIG 4

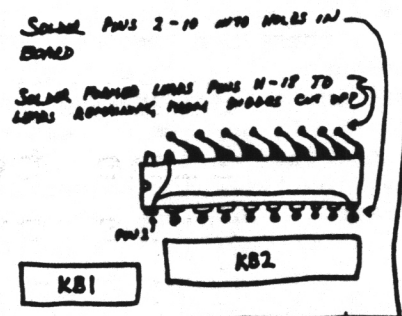


FIG 5
(COMPONENT SIDE)

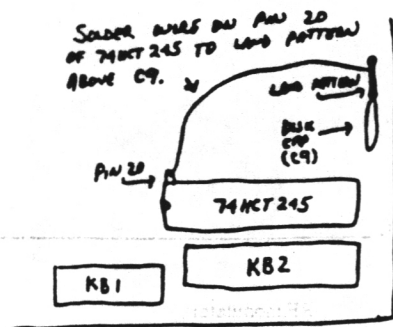


FIG 6
(COMPONENT SIDE)

Now view figure 4 and form the leads of the 74HCT-245 as shown. Then add the three wires as shown in the same figure to the IC.

Now looking at the component side of the board, insert the IC so that pin 10 goes into the pad to the right and pins 2-9, go into the pads, where the diodes used to be. Check figure 5. Once you're sure the IC is positioned correctly, solder pins 2-10 to the PCB, then solder pins 11-18 to the wire leads from the diodes.

Lastly, using figure 6, solder the wire from pin 10 of the IC to the point shown in the same figure.

Re-assemble your computer, power up and try the keyboard. If all is well, add all those peripherals and enjoy. If your keyboard only partially works, check those internal ribbon cables and insure that they are not broken.

LOAD/SAVE SWITCH

By Cedric R. Bastiaans

It was at a recent LIST-meeting that I witnessed two members of our club trying desperately to LOAD a program into a TS2068. Time after time they were getting the infamous report code "R, Tape loading error" on the screen.

Wanting to help, I approached them and saw that a dual audio cable was inserted (both ends) in the EAR and MIC jacks. I just couldn't believe my eyes; here we are, almost five years after the first Sinclair computer was introduced and early on we had already been warned never to do this, because it would cause a ground loop or signal feedback or what have you, with resulting LOADING and or SAVEing problems. I commented accordingly, got two ignorant stares so I pulled the one plug out of the MIC jack of the computer. After this, the program LOADED without a hitch...

The recommended practice of using only ONE cable at a time, either going from EAR to EAR for LOADING or from MIC to MIC for SAVEing, has been described in the Timex/Sinclair literature I don't know how many times. However, repeated unplugging and insertion of a plug is often not well received - pun intended - by the mechanically not so sturdy two-bit (I refer to the monetary unit, not the binary character) jacks used on the ZX's and the TS's. It is also rather tiring ...Therefore, a LOAD/SAVE switch is a much more elegant solution.

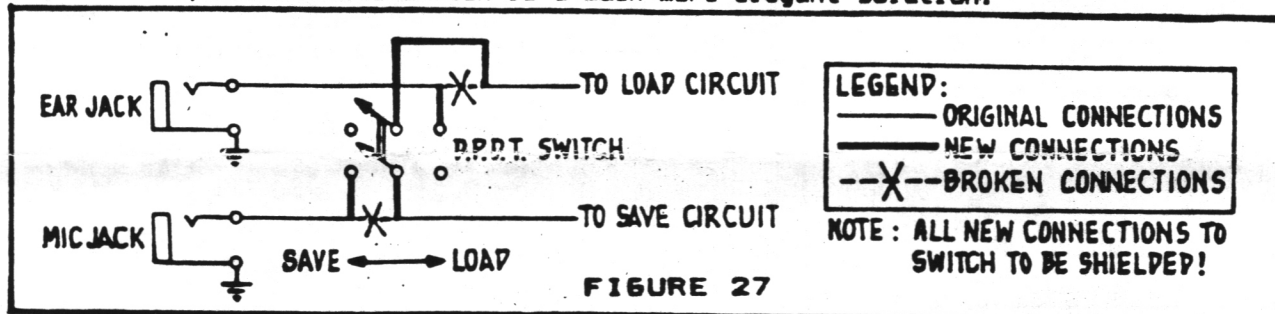


Figure 27 shows a diagram; it is aimed at building such a circuit in the computer case. It therefore requires that you do some unsoldering, cutting and resoldering in the computer. The use of small-diameter 1-conductor shielded cable is recommended; connect the shields together at one point to circuit board ground. It is really very easy, but if you have no idea at all how to proceed, maybe you should not attempt this modification.

Anyway, the two-position switch allows the dual audio cable to stay plugged in at all times, in all four jacks and LOADING and SAVEing take place by setting the switch in the appropriate positions, effectively isolating the EAR and MIC inputs.

Connect a Monitor to the TS1000 Cass R. Lewart

Using a Timex/Sinclair 1000 with a video monitor instead of a TV set gives a dramatic improvement in the picture quality. This is particularly so with respect to the TS1000 graphic symbols.

Although the computer comes only with a standard RF output, it is comparatively easy to provide an additional monitor output. My modification requires only a single transistor: a Radio Shack 276-2009 or equivalent. No traces have to be cut on the TS1000 board. The result is a display with full brightness and contrast on any run-of-the-mill monitor. The modification should take no more than 10 minutes to perform.

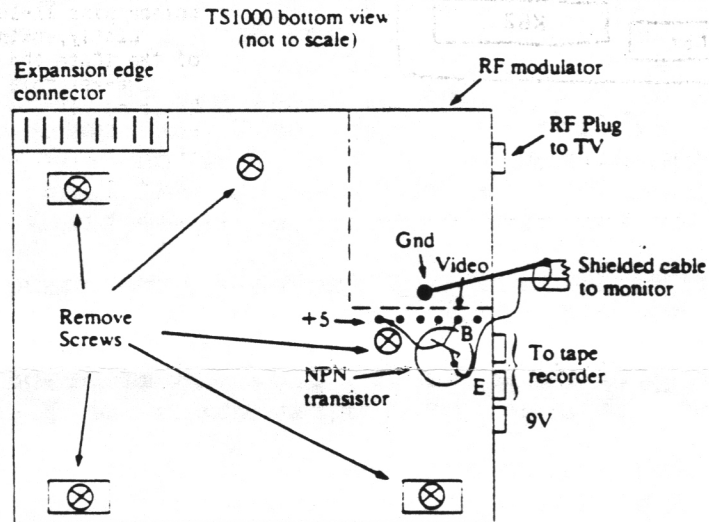
To perform the operation, first remove the Phillips screws on the bottom of the computer (some of these screws are hidden under the rubber feet). Then make the soldered connections as shown in Figure 1. Tap the video input to the RF modulator and use one of the other two inputs as power supply (B+) for the transistor. To get B+ on the lead indicated, the computer channel switch must be kept in the Channel 2 position.

The video voltage at the input to the RF modulator is approximately 1 Volt peak to peak. This would be sufficient to drive a monitor with sufficient contrast and brightness. However, the source impedance at this point is nearly 1000 Ohms. Therefore, a direct connection to a 50-75 Ohm monitor means a voltage drop to less than 100 mV. The result would be marginal brightness and contrast. The NPN transistor connected in the emitter follower configuration, as shown, provides the required impedance transformation, so that the full 1 Volt peak to peak reaches the monitor independent of the impedance of the monitor.

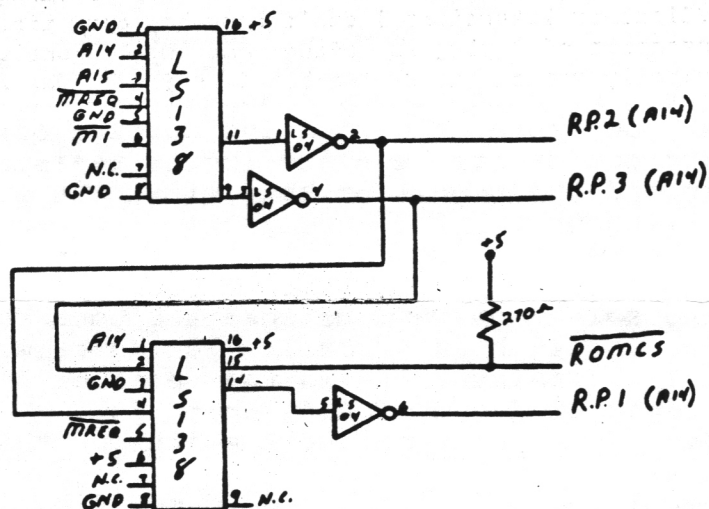
Next, decide where to mount the video monitor output jack. You can mount it next to the RF output, or, if you are not planning to use the RF output, you can use the RF jack and bypass the RF modulator. My own solution, though not a very neat one, was to let two wires dangle through one of the holes and to connect the wires to the monitor with clip leads.

Cass R. Lewart, 12 Georgea Dr., Holmdel, NJ 07733.

Figure 1.



Memory desiging for 3 16K Timex rampacs



The T/S rampacs use address line A14 as an enable. By interrupting and controlling this signal we can control where the rampac will be mapped. This circuit will map three rampacs RP1 @ 16384, RP2 @ 32768, RP3 @ 49152. The top 32K of ram can only be used for variable storage or ram disk. If your basic program pushes the display file into this area your program will be transformed into a graphic's generator. All other lines to the rampacs except A14 remain the same.

D. DAILEY

[This modification to the TS100 for enhanced speed was downloaded from COMP.SYS.SINCLAIR on 22 May 1995. He, in turn, 'downloaded' it from an unspecified old club newsletter; the original author seems to be Anthony W Farrell. Slightly edited for clarity. Mr Graham is at TG@TELEPORT.COM.]

The whole idea of experimenting with a "Turbo Switch" came from reading the book "Explorer's Guide to the T/S1000" by Mike Lord. On page 58 of this book under the heading "Keyboard Scanning" he tells how the system variable MARGIN may be changed from 55 to 31 by taking pin 22 of the ULA chip HIGH or LOW. This is supposed to be of use to the computer manufacturer to enable the 1000 to be used in either the USA which uses 31 blank lines at the top and bottom of the screen, or in the UK which uses 55 blank lines. The book also states on page 53 under the heading "NMI Handler" that "When in the SLOW mode the ZX81 uses the time occupied by these blank lines to carry on with your program."

So I thought that if I increased the number of lines on my 1000, I might increase the speed of program execution. And it works well. I use direct video and have not tried it using the RF modulator, but if you use direct video I think you will have success from the modification.

To test the speed of program execution I use the following BASIC program:

```
10 FOR N=1 TO 500
20 NEXT N
30 PRINT "FINISHED"
```

With pin 22 HIGH the computer takes 20 seconds. With the pin LOW the program takes 28 seconds. This is a considerable increase in speed. One might ask "Why have a TURBO Switch?". Well, when I use my WORD* program at the "Turbo" speed the cursor blinks at about twice the normal rate and does not seem to miss keys as it did in the past, and when playing games I use the slower speed so that I can get a higher score!.

When using the higher speed I find the monitor screen is filled with lines from top to bottom, when using the slow speed I find a blank screen at the top and bottom 1/2 inch of the screen. I can switch from "Turbo" to normal at any time without any crashes.

Lastly, how is the modification carried out? You have to take the T/S1000 circuit board out of its case and locate resistor R30 which is located between the ULA chip and the regulator heat sink. It should have the colors Brown Black Brown (100ohms).

Using a soldering iron, lift the left hand end of the resistor clear from the circuit board hole. Also locate resistor R38 which is four resistors down from R30, and solder one end of some two core cable to the left hand end of R38, which should be a 5V rail. To the raised left end of R30, solder one end of a 1K 1/4W resistor. Bend the resistor upwards and solder the other end to the right hand end of R34, which is a 0V rail. To the junction of R30 and the added 1K resistor solder a switch of the single throw single pole type.

That completes the circuit board modification. Try connecting a multi meter at the solder connection between R30 and the 1K resistor, and ground. When the 1000 is powered up, the "Turbo" switch should change the voltage from nearly 0V to nearly 5V, and if you have your monitor connected you should see the screen flicker.

The switch should be mounted somewhere convenient, accessible from outside the T/S1000. I have my T/S1000 mounted inside a steel chassis and so I mounted the "Turbo" switch on the front panel with the words "TURBO" and "NORMAL" along side the switch. Try entering and running the program that I LISTed earlier and see the difference the switch makes.